



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

JUL 20 2005

DOT-E 11993
(TENTH REVISION)

EXPIRATION DATE: June 30, 2007

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Key Safety Systems, Inc.
Lakeland, FL

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of non-DOT specification cylinders (pressure vessels) for use as components of automobile vehicle safety systems. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. FIVE YEAR TRANSPORTATION AUTHORIZATION: This exemption authorizes transportation of the pressure vessels identified herein for up to five years from the date of manufacture. This limitation does not apply to non-specification pressure vessels when installed in air bag modules. This exemption provides no certification of safety for end use environments and life cycles.

c. EXEMPTION SCOPE LIMITATIONS: This exemption only applies to a package when it is an article of commerce in transportation. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, incorporation as a component of a vehicle or other device, or other uses not associated with transportation in commerce. This exemption provides no certification of safety for end use environments and life cycles.

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3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.301(a)(1) and 173.302a in that the use of a non-DOT specification cylinder is not authorized, except as specified herein.
5. BASIS: This exemption is based on the application of Key Safety Systems dated May 19, 2005, submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Air bag inflators, or Air bag modules, or Seat-belt pretensioners	9	UN3268	III
Air bag inflators, pyrotechnic or Air bag modules, pyrotechnic or Seat-belt pretensioner, pyrotechnic	1.4G	UN0503	II

Note: A vehicle safety system or component which contains a quantity of pyrotechnic materials must be classed and approved as provided for in § 173.56 of the HMR. If the pyrotechnic material augments the volume of the gas in the pressure vessel, or in any way enhances the performance of the compressed gas, the device must be tested in the same configuration as when shipped.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a non-DOT specification pressure vessel meeting the drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and the following requirements:

- (1) The maximum service pressure at 70°F may not exceed 9,000 psig. The minimum test pressure is the pressure of the contents at 200°F. The rated service pressure may not exceed 80 percent of the test pressure and the water volume of each pressure vessel may not exceed one liter.

(2) Material of construction must conform to all requirements of § 178.65(b), except that aluminum is limited to 6061 alloy of T6 temper.

(3) Manufacturing requirements must conform to all requirements of § 178.65(c), except as follows:

(i) Controlled marking of the sidewall by laser etching or other electro-mechanical means is permitted provided that the depth of the markings does not exceed 0.22mm (0.009") and the height of the marking must be between 2.54mm (0.10") and 6.35mm (0.25").

(ii) Welding of attachments to the cylinder after the § 178.65(f)(1) proof test is permitted in accordance with Key Safety Systems weld procedures on file with the OHMEA. Following the welding, each cylinder must have a leak test performed in accordance with the Key Safety Systems Quality Control Plan on file with the OHMEA.

(4) The minimum wall thickness must be such that the wall stress meets the requirements of § 178.65(d).

(5) Openings and attachments must conform to all requirements of § 178.65(e) except as follows:

(i) A fill port hole may be located in an imaginary circle, concentric to the axis of the cylinder, not exceeding 90 percent of the outside diameter of the cylinder. Drawings showing the location of the fill port hole must be on file with the OHMEA.

(ii) Welded attachments to the sidewall of the cylinder can be made provided that these attachments are not detrimental to the structural integrity of the cylinder. The burst performance of the cylinder shall not be less than 95% of the same cylinder design without attachments. In all cases, the burst pressure must meet the criteria of § 178.65(f)(2).

(6) Each pressure vessel must be equipped with a pressure relief device designed to meet all the requirements for a rupture disk prescribed in the Compressed Gas Association (CGA) Pamphlet S-1.1. The pressure relief device must be capable of preventing rupture of the pressure vessel when subjected to fire test conducted in accordance with CGA Pamphlet C-14.

b. TESTING -

(1) Each pressure vessel must be tested as required in § 178.65(f) except that -

(i) the hold time at test pressure specified in § 178.65(f)(1) may be limited to that which is adequate to ensure compliance with the requirements contained in § 178.65(f)(1), and

(ii) the maximum duration of the shift specified in § 178.65(f)(3) may be extended beyond 10 hours at the discretion of the independent inspector.

(2) The flattening test specified in § 178.65(g) is not required.

(3) A representative motor vehicle or aircraft safety system, packaged as it would be for shipment, must be activated and no materials other than non-toxic, non-flammable vapors or gases may be expelled from the package.

c. MARKING - Each pressure vessel must be durably marked as follows:

DOT-E 11993/9000¹

Lot No. xxxxx²

Manufacturer's Name

The Pressure Vessel May Not Be Refilled

¹ Where 9000 represents the design service pressure.

² Where xxxxx is the lot number as appropriate.

NOTE: Each line of these markings may be placed without regard to location or order on the pressure vessel.

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8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modification or change is made to the package or its contents and it is offered for transportation in conformance with this exemption and the HMR.

c. This exemption is limited to pressure vessels used as components of a vehicle safety system. The pressure vessels are excepted from the requirements of the HMR, Part 178 when the design has been certified by an Independent Inspection Agency, approved under Part 107, Subpart I, as having met all the requirements of this exemption.

d. The Independent Inspection Agency's design certification must include test results and documents related to explosive classification and approval. A copy of the certification must be maintained at each facility where the vehicle safety system is manufactured and by the Independent Inspection Agency for a period of 15 years from the date of completion of the design certification.

e. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

f. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

g. No modifications may be made to the pressure vessel, pyrotechnic components or production vehicle safety system which would affect the performance of the vehicle safety system or its compliance with the requirements of this exemption until such modifications have been reviewed, tested and certified by an Independent Inspector as meeting the requirements of this exemption.

h. This exemption is to serve as an authorization of The Competent Authority for the United States (CA-9804002) issued in accordance with the Part 4, Chapter 2; paragraph 2.5 of the International Civil Aviation Organization's

Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) and additionally meets the requirements of State Variation US 6. Pressure vessels or vehicle safety systems complying with this exemption are authorized to be shipped pursuant to Packaging Instruction 917 of ICAO TI.

i. Except when transported on passenger-carrying aircraft, devices utilizing the non-DOT specification pressure vessel authorized herein are exempt from the requirements of 49 CFR Parts 100-185 when installed in a motor vehicle or in completed vehicle components such as steering columns or door panels.

j. Pressure vessels, components, and vehicle safety systems must be transported in strong outside packaging in accordance with § 173.301(a)(9).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft, and cargo aircraft only (see restriction in paragraph 8(i)).
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper must furnish a current copy of this exemption to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
 - o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this exemption must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this exemption are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this exemption must notify the Associate Administrator for Hazardous Materials Safety -- OHMEA, in writing, of any incident involving a package, shipment or operation conducted under terms of this exemption.

Issued in Washington, D.C.:



Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

JUL 2 0 2005

DATE

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: cwf/alb